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8. (Amended) The method of claim 7 wherein said transformation is [further] associated with auxiliary reagents or reaction conditions. C

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12. (Amended) A method of identifying *in silico* each compound of a virtual library of compounds comprising:

selecting each of said compounds for said virtual library and, for each, dissecting said [compounds] compound into fragments;

assigning to each of said fragments at least one identifying characteristic;

adding said fragments together in sequential synthesis rounds;

assigning at least one transformation characteristic to each of said synthesis rounds; [and]

tracking [the] and storing said addition of fragments and said assigned transformation characteristics of said compounds in a database; and

identifying each of said compounds by its fragments and transformations stored in said database.

13. (Amended) A method of identifying *in silico* each compound of a virtual library of compounds comprising:

selecting each of said compounds for said virtual library and, for each, dissecting said compounds into fragments;

representing each of said fragments [in silico] in silico as a transformation wherein each transformation is a one to one link between a fragment and a reagent used to introduce said fragment into one of said compounds;

adding said transformations together in sequential synthesis rounds; [and]

tracking and storing said fragments and said transformations [in silico] in silico; and

identifying each of said compounds in silico by identifying the stored fragments and transformations associated with each compound.

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